

to cat.

## FARM CROPS AND THE WAR

LIBRARY  
RECEIVED

★ JUL 6 1942 ★

U. S. Department of Agriculture

"----- We farmers cannot make bombers, nor tanks nor battleships. But the thundering factories and smoking steel mills cannot make food. And without food for men, bombers can't fly, ships can't sail, and tanks can't roll.-----That's what we mean when we say farmers are in this war."

Fred S. Wallace, Chief  
Agricultural Adjustment Agency

Issued by  
Division of Information  
U. S. Agricultural Adjustment Agency  
May 21, 1942

A-115-42

## FARM CROPS AND THE WAR

### Contents

	Page
(1) Wartime Uses for Major Commodities	1
(2) Farm Products Used in Manufacturing War Supplies	6
(3) Oil Crops Required to Paint	7
(4) "Assembly Line" Figures on U.S.	8
(5) 1942 War Production Goals for Weapons	9
(6) Quantity of Food One American Soldier Eats in One Year	9
(7) Quantity of Food U.S. Army of 6,000,000 Men would consume--per minute, hour, day and year.	10
(8) When a Food Ship Sails---Average Amount it contains in terms of Farm Production.	11
(9) Table Showing Percentage of U.S. Farm Products Grown in North Central Region-- on value basis.	12

- 1 -

WARTIME USES FOR MAJOR FARM COMMODITIES

CORN - The greatest use for corn is for feeding to livestock, which in turn means an ample supply of foods of many kinds -- meats, eggs, lard, dairy products -- needed for our armies and civilian workers and for Lend-Lease shipment to our allies.

"Wet process" products made from corn are also important to the prosecution of the war. These include corn sugar, corn syrup, and corn starch. The first two can help make up the sugar shortage by substituting for cane sugar in candy making, baking, and other cooking. They are important to a certain extent in making explosives. Corn is also being used more and more in the production of ethyl alcohol, which in turn is used in making explosives, synthetic rubber, and other vital products.

Over 12 million bushels of corn were shipped to our allies under Lend-Lease through April 1, 1942.

WHEAT - The greatest wartime or peacetime use for wheat is of course as food for human beings and for animals. Four times as much wheat went into flour in this country last year as for any other use -- 485 million bushels in all. Consumption of wheat as food for human beings is expected to increase from 8 to 10 million bushels this year because of its use in the diet of our armed forces. One hundred and ten million bushels of wheat were used as animal feed, 69 million bushels for seed, and 10 million bushels for breakfast foods last year. One million bushels went into alcohol, distilled spirits, coffee substitutes, and other miscellaneous products. The amount going into alcohol and distilled spirits is expected to be larger this year because of programs to substitute wheat for sugar in the making of such products, which in turn are used in manufacturing such strategic wartime materials as synthetic rubber and smokeless powder.

More than 58 million bushels of wheat had been shipped to other United Nations by this country through April 1, 1942.

SOYBEANS - Soybeans crushed into oil are one of our most important wartime commodities because of the loss of Far Eastern sources of vegetable oil supply and

SEP 10 1942  
RJB

the increased use of fats and oils in this country because of the war. Almost all our soybean oil is used for food products -- margarine, shortening, and cooking oil. An increasingly large quantity is being used in making soap and its by-product, glycerine. Glycerine is used in making nitro-glycerine explosives for firing America's guns. Soybean oil is also used for making paint and varnish, linoleum and oil cloth, medicines and printing ink.

Soybeans are also an indirect producer of fats. The great volume of soybean cake or meal left after the oil is extracted furnishes valuable protein concentrate feed for feeding to livestock, which in turn produce animal fats and oils.

Soybeans are also used in making plastics. This work is still considered in the experimental stage but few farm materials have proved as favorably constituted for plastics development as the soybean. Work has also been done on developing a textile fiber made with soybeans and there is good probability that a commercial soybean wool will be produced. These uses might become more important if other shortages develop as the war continues.

About 19 million pounds of soybeans and 15 million pounds of soya flour had been shipped to her allies by the U.S. under Lend-Lease through April 1, 1942.

FLAXSEED - An abundant supply of linseed oil made from flaxseed is vital in the war effort. In 1941, 65 percent of all U.S. paints and varnishes was made with linseed oil, one of the best of the drying oils. Ten percent of our paint and varnish was once made from tung and perilla oil shipped here from the Far East. With this supply cut off, linseed oil must help make up the deficit and also meet greatly increased wartime needs. As our imports of flaxseed from South America are uncertain because of shipping difficulties, domestic production is more important than ever in producing paint for our battleships, planes, tanks, guns, and cantonments.

FLAX - The variety of flax raised for seed is unsuited to the production of a long linen fiber. Fiber flax is the source of linen which serves many military and naval purposes, among them being parachute

harness and rigging, signal halyards, cable linen, and packing for marine engines. Small quantities of flax straw are used commercially for making paper, semiflexible sheets of insulation, and flaxstraw rugs. Flax straw is considered excellent for making cigarette paper.

RYE - About 9 million bushels of the U.S. rye crop in 1941 went into the making of rye flour and other food products. About 7 million bushels were used for making beverage alcohol and a small amount -- 255,000 bushels -- went for industrial alcohol. Twenty-five million bushels were used on the farm as feed or seed.

DAIRY PRODUCTS - Milk for shipment under Lend-Lease in the form of evaporated milk, dried milk, and cheese is one of the most important items in our Food-for-Freedom program. More than 577 million pounds of evaporated milk,  $37\frac{1}{2}$  million pounds of dry skim milk, and 164 million pounds of cheese were shipped to other United Nations by the U.S. between April 29, 1941, and March 1, 1942. Ample supplies of milk and milk products are of course also needed for feeding our own Army, Navy, and civilian workers. As our expeditionary forces abroad become larger, our need for evaporated and dried milk rather than milk in fluid form will become greater.

Casein derived from skim milk is of increasing importance because of the war effort. Casein glues for use in the plywood industries are needed to substitute for animal glues now largely required for the aircraft and naval building programs. Casein paint is increasing in importance as a substitute for paints made with vegetable oils. Protein plastics made with casein and used in the manufacture of buttons and other small articles are becoming more important as the war advances. Fiber made from milk casein is being manufactured and made into fabrics. Europe is far ahead of us in the use of casein for fibers and plastics, largely because of shortages there, but we may find such uses invaluable in case of emergency.

EGGS - Eggs are a strategic food because of their mineral and vitamin content. They are rated as a "protective" food and have building properties which make them valuable during convalescence and in many types of illness. They are being shipped to our allies under Lend-Lease in dried, frozen, and shell form, about

46 million pounds of dried eggs, 52 million pounds of frozen eggs, and 40 million pounds of shell eggs having been shipped during the past year. These shipments and increased use in this country because of the war have necessitated a bumper egg crop this year.

MEAT - Plenty of meat, a high-protein, energy food, is vital in wartime. During the past year, the United States has shipped more than 450 million pounds of canned, dried, and cured meats to our allies. About 440 million pounds of this was pork, either cured or canned. Beef goes into Army Ration, a mixture of beef and beans, is sent as India Mess Beef, a pickled product, or in dried form. Our armed forces require large quantities of meat. A soldier's diet contains about twice as much meat as the average per capita consumption by individuals in private life.

Almost 357 million pounds of lard were shipped under Lend-Lease during the past year. Animal fats are becoming an increasingly significant item in the wartime supply picture because of vegetable fat and oil scarcities and increased fat and oil requirements.

WOOL - Last year, the United States used one billion pounds of wool, compared with an average yearly use of about 600 million pounds in other recent years. It is expected that we will use at least as much wool this year as last and that most of it will go into uniforms for our armed forces and other non-civilian, wartime uses. Aviators' jackets, pants, helmets, and boots are lined with shearling sheep skins. Sheep raisers have been asked by the Government to shear many animals which normally would be marketed with wool too long for flying suits, and to shear soon enough to permit the wool to grow before slaughter time to the proper length for sheep-lined clothing.

DRY EDIBLE BEANS - Beans, a traditional army and navy food, are still an important item of diet for the soldier, sailor, and marine. In addition, quantities are being shipped abroad to provide nourishing, filling food for our hungry allies. More than 186 million pounds of dry beans and 1½ million cases of baked beans have been shipped under Lend-Lease during the past year.

SUGAR BEETS - Sugar beets are in the spotlight because of the present sugar scarcity and will help compensate for the difficulty of getting sugar shipped in by water. Sugar beets go almost entirely into food for human beings. Such by-products as beet pulp and molasses are used in feeding livestock. Also molasses made from sugar beets is used in making yeast and in case of emergency can be utilized in the manufacture of industrial alcohol.

FARM PRODUCTS IN WAR MATERIALS

CONSTRUCTION OF A BOMBER

Shellac, paint  
Cotton and cotton linters (short staple)  
Paper and paper pulp  
Jute  
Wool and Mohair  
Rubber

\*\*\*\*\*

Cotton fabric for surfacing ailerons.

Army's B-19 Douglas bomber has 410 square feet of cotton linen on its ailerons -- this is equivalent to  $7\frac{1}{2}$  bedsheets.

Army's Aeronca: Cotton linen for wings, tail and fuselage covers 650 square feet; equivalent to 12 bedsheets.

Beechcraft training ship uses 1,000 square feet of cotton linen; equivalent to 18 bedsheets.

---

BATTLESHIP

55,000 pounds of 110 bales of cotton are used in building a 35 thousand ton battleship (total cost 60 million dollars.)

---

AMMUNITION

Cotton and alcohol are needed to make smokeless powder. To fire a 16 inch gun on a battleship requires 680 pounds of smokeless powder made from 476 pounds of cotton linters (roughly one bale) and the alcohol from 1/5 acre of sugar cane or 1-1/2 acres of wheat (U.S. average yield.)

Propelling charge for 6 inch gun contains up to 37 pounds of powder or 26 pounds of cotton linters.

---

COTTON - CIVILIAN VS. SOLDIER

Average U. S. civilian consumes 25 pounds of cotton a year in terms of cotton goods.

Average U. S. soldier consumes 75 pounds of cotton a year in terms of cotton goods.

Average U. S. soldier in combat consumes several times his normal 75 pounds per year.

WOOL

Average civilian uses  $2\frac{1}{2}$  pounds of wool a year.  
Average soldier uses 100 pounds of wool a year.

\*\*\*\*\*

DATA ON AMOUNT OF PAINT AND OIL REQUIRED FOR SELECTED TYPES OF WARSHIPS

	UNIT (35,000 ton)	BATTLESHIP (35,000 ton)	CRUISER (10,000 ton)	DESTROYER (2,000 ton)	SUBMARINE (1,500 ton)
Paint required	ton	35	10	2	1.5
Oil (45 percent)	ton	15.75	4.5	0.9	.7
Oil (reduced to gallons)	gallon	4,200	1,200	240	187
Flaxseed required to produce oil	bushels	1,654	473	95	74
Acres required (1941 yield 9.8 bu.)	acres	169	48	10	8
Soybeans required to produce oil	bushels	3,500	1,000	200	155
Acres required (1941 yield 18.2 bu.)	acres	192	55	11	9

U.S. AGRICULTURE'S 1942 PRODUCTION GOALS EXPRESSED IN ASSEMBLY LINE TERMS

COMMODITY	UNITS	GOALS	PRODUCED PER DAY	PRODUCED PER HOUR	PRODUCED PER MINUTE
Milk, farm	Quarts	56,818,182,000	155,666,000	6,486,000	108,000
Eggs, farm	Number	45,869,004,000	125,669,000	5,236,000	87,000
Beef and veal 1/	Pounds	18,600,000,000	50,959,000	2,123,000	35,000
	A-	775,000 cars	A- 2,123 cars	88½ cars	1½ cars
Hogs 1/	Pounds	19,891,581,000	54,497,000	2,270,000	38,000
	B-	1,170,093 cars	B- 3,206 cars	134 cars	2.2 cars
Beans, dry edible	Pounds	2,040,000,000	5,589,000	233,000	3,900
Potatoes	Pounds	23,613,678,000	64,695,000	2,696,000	45,000
Peas, for processing					
	#2 Cans	912,000,000	2,499,000	104,000	1,700
	Pounds	844,000,000	2,312,000	96,000	1,600
	Pounds	914,000,000	2,504,000	104,000	1,700
Tomatoes, for processing					
	#2 Cans	960,000,000	2,630,000	110,000	1,800
	Pounds	2,400,000,000	6,573,000	274,000	4,600
	Pounds	5,800,000,000	15,890,000	662,000	11,000
Total Production					
Peanuts	Pounds	3,973,117,000	10,885,000	453,000	7,500
	Pounds	2,695,487,000	7,385,000	308,000	5,100
	Pounds	700,000,000	1,918,000	80,000	1,300
Total Production					
Peanut Oil 2/	Pounds	9,860,189,000	27,014,000	1,125,000	18,700
Soybeans, for beans	Pounds	1,100,000,000	3,014,000	126,000	2,100
Soybean Oil 2/	Pounds				

1/ Liveweight marketings and farm slaughter. A- 24,000 lbs. average weight per freight car.

B- 17,000 lbs. average weight per freight car.

2/ Estimated amount of oil if goals are reached.

2/ Estimated amount of oil if goals are reached.

If 1942 War Production Goals are Reached the United States of America will Produce

Type of Weapon	1942 (number)	Per Day* (number)	Per Hour (number)
Planes	60,000	164	7
Tanks	45,000	123	5
Anti-air craft Guns	20,000	55	2
Ships (dead weight tons)	8,000,000	21,918	913

\* 24 hour work day used.

Based on Speech by President Franklin D. Roosevelt, January 6, 1942

Soldier Eats in One Year

Milk	403 quarts
Potatoes	253 pounds
Dry Beans and Nuts	24 "
Tomatoes, Citrus Fruits	142 "
Leafy green and yellow vegetables	142 "
Other vegetables and fruits	312 "
Eggs	525 eggs
Meats, poultry and fish	287 pounds
Flours, cereals	215 "
Fats, oils (bacon and salt pork)	133 "
Sugars, syrups and preserves	114 "

U. S. ARMY OF 6,000,000 MEN WOULD EAT

Food	Unit	Per Year	Per Day	Per Hour	Per Minute
Milk	Quarts	2,414,490,000	6,615,041	275,627	4,594
Potatoes	Pounds	1,515,480,000	4,152,000	173,000	2,883
Dry Beans and Nuts	Pounds	144,540,000	396,000	16,500	275
Tomatoes and Citrus Fruits	Pounds	849,720,000	2,328,000	97,000	1,617
Leafy Green and Yellow Vegetables	Pounds	851,940,000	2,334,082	97,253	1,621
Other Vegetables and Fruits	Pounds	1,872,480,000	5,130,082	213,753	3,563
Eggs	Dozens	262,800,000	720,000	30,000	500
Meats, Poultry, and Fish	Pounds	1,723,560,000	4,722,082	196,753	3,279
Flours and Cereals	Pounds	1,292,100,000	3,540,000	147,500	2,453
Fats, oils (bacon & pork)	Pounds	795,000,000	2,178,082	90,753	1,512
Sugars, Syrups, and Preserves	Pounds	681,120,000	1,866,082	77,753	1,296

May 14, 1942

A FOOD SHIP SAILS

Average Amounts It Contains

Commodity	Amount <u>1/</u>	Equivalent	Whole Year's Production Of:	Farms <u>2/</u>
Dried Eggs	6,000 barrels	Fresh Eggs 2,700,000 doz.	229,137 hens	323
Dried Milk	6,000 barrels	Fluid Milk 13,200,000 lbs.	2,783 cows	497
Evaporated Milk	16,552 cases	1,440,000 lbs.	304 cows	54
Cheese	20,000 boxes	Fluid Milk 14,440,000 lbs.	3,037 cows	542
Canned Pork	14,500 large cans	870,000 lbs.	5,021 hogs	314
Cured Pork	2,500 boxes	874,000 lbs.	5,044 hogs	315
Lard	16,800 boxes	840,000 lbs.	Lard from 27,632 hogs	1,727
Flour	6,061 sacks	14,256 bus.	838 acres	21
Canned Vegetables	26,111 cases	940,000 lbs.	40 acres of tomatoes 100 acres of snap beans 102 acres of peas	15 <u>16</u> <u>5,824</u>

1/ Total amount of all commodities equal to cargo average U. S. freighter will carry.

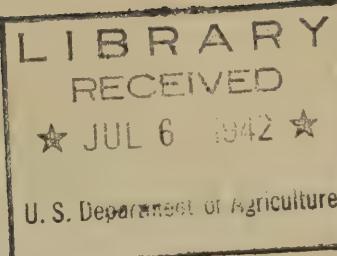
2/ Based on average numbers for farms reporting these crops and animals.

## DATA ON UNITED STATES AND NORTH CENTRAL REGION OF AAA

Item	Unit	United States	North Central Region	Percent N. Central of U. S.
All farm products sold, traded or used by farm households, crop year 1939		\$7,813,644,567	\$2,972,286,786	38
Total land in farms, 1939	Acres	1,060,507,355	301,968,160	28
Production, 1941:				
Corn, all	bu.	2,672,541,000	1,860,442,000	70
Rye	bu.	45,191,000	22,452,000	50
Flaxseed	bu.	31,485,000	20,993,000	67
Beans, dry edible	100 lb. bags (uncleaned)	18,788,000	6,192,000	33
Hay, all	tons	94,107,000	41,714,000	44
Peas, dry field	bu.	6,315,000	219,000	3
Soybeans, for beans	bu.	106,712,000	98,900,000	93
Milk, produced on farms	1,000 lbs.	115,498,000	56,429,000	49
Production, 1940:				
Cattle & calves	1,000 lbs.	15,510,510	7,147,870	46
Hogs	1,000 lbs.	16,625,751	11,778,879	71
Chickens	No. produced	607,801,000	252,342,000	42
Eggs	1,000 eggs	38,879,000	16,913,000	44

# # #

1.42  
In3Fc  
rev.



U. S. FARM CROPS AND THE WAR

"----- We farmers cannot make bombers, nor tanks nor battleships. But the thundering factories and smoking steel mills cannot make food. And without food for men, bombers can't fly, ships can't sail, and tanks can't roll.-----That's what we mean when we say farmers are in this war."

Fred S. Wallace, Chief  
Agricultural Adjustment Agency

Issued by  
Division of Information  
U.S. Agricultural Adjustment Agency  
June 15, 1942  
(Revised)

## U. S. FARM CROPS AND THE WAR

### Contents

	Page
(1) Wartime Uses for Major Commodities	3
(2) Farm Products Used in Manufacturing War Supplies	11
(3) Oil Crops Required to Paint	12
(4) "Assembly Line" Figures on U.S.	13
(5) 1942 War Production Goals for Weapons	14
(6) Quantity of Food One American Soldier Eats in One Year	14
(7) Quantity of Food U.S. Army of 6,000,000 Men would consume--per minute, hour, day and year.	15
(8) When a Food Ship Sails---Average Amount it contains in terms of Farm Production.	16
(9) Dramatic Facts about 1942 Production Goals.	17
(10) Battleship = Work + Food	18

WARTIME USES FOR MAJOR FARM COMMODITIES

**CASTOR BEANS:** The U. S. has been importing practically all of its castor oil from Brazil. This country annually imports about 237 million pounds of the oil. Now the war has cut off the supply and this year U. S. farmers have planted between 7,500 and 8,000 acres of castor beans for seed as a safeguard to grow a crop for oil in 1943 if it remains necessary to do so. If the yield is 500 pounds per acre, it will be possible to plant between 700,000 and 800,000 acres next year. Castor oil has been used for medicinal purposes in varying amounts for many years; however, the total volume required for this use has never been a large item of commerce. The bulk of the oil has been consumed for technical purposes in the manufacture of a variety of products such as soap, artificial leather, fly paper, special inks, and in making sulfonated oil used in the dyeing of cotton fabrics. Due to a recent development of a commercial process of dehydrating castor oil there is now a ready market for the processed oil as a drying oil in the paint and varnish industry. Because castor beans were used to a considerable extent as a lubricant for airplane engines during the first World War many persons have been prompted to inquire whether large quantities of the oil will be required in connection with the increased activity in the airplane industry. However, other oils are being used for this purpose, and little if any castor oil is now diverted to this use in the U. S.

**CORN:** The greatest use for corn is for feeding to livestock, which in turn means an ample supply of foods of many kinds -- meats, eggs, lard, dairy products -- needed for our armies and civilian workers and for Lend-Lease shipment to our allies.

"Wet process" products made from corn are also important to the prosecution of the war. These include corn sugar, corn syrup, and corn starch. The first two can help make up the sugar shortage by substituting for cane sugar in candy making, baking, and other cooking. They are important to a certain extent in making explosives. Corn is also being used more and more in the production of ethyl alcohol, which in turn is used in making explosives, synthetic rubber, and other vital products.

Over 12 million bushels of corn were shipped to our allies under Lend-Lease through April 1, 1942.

**COTTON:** Cotton is now the king of war fibers. The varieties of the longest staple--Sea Island and American-Egyptian--have taken the place of silk in the manufacture of the highly-specialized fabrics which must be light, strong and water-repellent, such as balloon and parachute cloth, and material for life-rafts and pontoons for aircraft. The American upland longstaple varieties, those between 1-1/8 and 1-3/8 inches, are used for certain types of canvass, uniform cloth, and web belting. The shortest fibers remain as a backlog of raw material from which an ever-increasing list of both military and civilian materials is being made.

Cotton linters are becoming steadily more important in the manufacture of explosives, and experiments show that lint cotton can also be used for this purpose. Then there is the chief by-product, cottonseed oil, which has become vastly more important since the war cut off our importations of vegetable oils from the Far East.

The war knocked American cotton exports down from a normal six million bales to around one million last year, but consumption, both military and civilian, rose to an all-time high of 9,718,000 bales for the 1940-41 season. In a few months, when the nation's spindles catch up with the demand, the production of uniforms will be the fastest in history. We are now using cotton at the rate of 11.5 million bales a year, compared with a normal consumption of about 6 million. This upsurge in consumption is rapidly eating up the shipping deficit, and is making inroads on the two-year supply now on hand.

A new theory is now in operation among cotton-cloth spinners; that is, to make fewer yards of material per bale, but to make the cloth much stronger. This will result in lessening the stockpile and in providing a more durable fabric for both civilian and military use.

**DAIRY PRODUCTS:** Milk for shipment under Lend-Lease in the form of evaporated milk, dried milk, and cheese is one of the most important items in our Food-for-Freedom program. More than 577 million pounds of evaporated milk, 37 $\frac{1}{2}$  million pounds of dry skim milk, and 164 million pounds of cheese were shipped to other United Nations by the U. S. between April 29, 1941, and April 1, 1942. Ample supplies of milk and milk products are of course also needed for feeding our own Army, Navy, and civilian workers. As our expeditionary forces abroad become larger, our need for evaporated and dried milk rather than milk in fluid form will become greater.

Casein derived from skim milk is of increasing importance because of the war effort. Casein glues for use in the plywood industries are needed to substitute for animal glues now largely required for the aircraft and naval building programs. Casein paint is increasing in importance as a

substitute for paints made with vegetable oils. Protein plastics made with casein and used in the manufacture of buttons and other small articles are becoming more important as the war advances. Fiber made from milk cascin is being manufactured and made into fabrics. Europe is far ahead of us in the use of casein for fibers and plastics, largely because of shortages there, but we may find such uses invaluable in case of emergency.

**DRY EDIBLE BEANS:** Beans, a traditional army and navy food, are still an important item of diet for the soldier, sailor, and marine. In addition, quantitics are being shipped abroad to provide nourishing, filling food for our hungry allies. More than 186 million pounds of dry beans and  $1\frac{1}{2}$  million cases of baked beans have been shipped under Lend-Lease during the past year.

**EGGS:** Eggs rate high among the most valued "protective" foods which are being sent to the United Nations under Lend-Lease. Their vitamin and mineral content make them vitally necessary in wartime. Millions of dozens are being produced on United States farms to meet every possible requirement, including those of our own armed forces, our expanding domestic needs, and those of our allies. More than four and a quarter billion dozen eggs will be produced in the United States this year to make certain that every demand is met. In addition to the vast quantities of eggs consumed in this country in the past year, a total of nearly 46 million pounds of dried whole eggs, 52 million pounds of frozen eggs, 27 million dozen shell eggs, have been bought under Lend-Lease and delivered for shipment to the United Nations.

**FIBER FLAX:** The variety of flax raised for seed is unsuited to the production of a long linen fiber. Fiber flax is the source of linen which serves many military and naval purposes, among them being parachute harness and rigging, signal halyards, cable linen, and packing for marine engines. Small quantities of flax straw are used commercially for making paper, semiflexible sheets of insulation, and flaxstraw rugs. Flax straw is considered excellent for making cigarette paper.

**FLAXSEED:** An abundant supply of linseed oil made from flaxseed is vital in the war effort. In 1941, 65 percent of all U. S. paints and varnishes was made with linseed oil, one of the best of the drying oils. Ten percent of our paint and varnish was once made from tung and perilla oil shipped here from the Far East. With this supply cut off, linseed oil must help make up the deficit and also meet greatly increased wartime needs. As our imports of flaxseed from South America are uncertain because of shipping difficulties, domestic

production is more important than ever in producing paint for our battleships, planes, tanks, guns, and cantonments.

**GARDENS:** It has never been good economy for farm families to buy the bulk of their food---they can grow it much more cheaply. This war emergency, with its shortages of cans, transportation and other things, will force every farm family in the nation to meet its own food needs. This will result in two of the farm's "lost arts" being brought back into practice, namely, the preserving and storing of homegrown food, and the saving of seed.

This year and from now on, every farm family, and especially those in the low-income groups, must realize that their most important crop, both from the standpoint of health and economy, is a vegetable garden. This is in keeping with the admonition of agricultural leaders that every farm must become its own little factory in which all the basic necessities are produced.

The more food that is produced on the farm, the less will be the burden on processing and transportation facilities, and the more food will be available for civilian workers, fighting men and Lend-Lease shipments.

**HEMP:** The need for a marked increase in the production of hemp fiber in the United States is a direct outgrowth of the war in the Pacific. Fiber from the American hemp plant is the most satisfactory substitute for abaca, sisal and hennequen, the three principal hard fibers whose supply has been drastically curtailed because of the sharp decline in imports. Hemp is needed to make heavy rope, cables, hawsers, etc., particularly for our merchant marine and fighting ships. At home it is needed on the farm front, replacing steel cables as steel is needed now for military purposes. Much expansion of acreage in 1942 is impossible because of the shortage of seed; hence efforts are being made this year to produce enough seed in 1942 to plant a large acreage for fiber in 1943 -- possibly 200,000 to 400,000 acres. This calls for a seed crop this year of about 35,000 acres.

**MEAT:** Plenty of meat, a high-protein, energy food, is vital in wartime. During the past year, the United States has shipped more than 450 million pounds of canned, dried, and cured meats to our allies. About 440 million pounds of this was pork, either cured or canned. Beef goes into Army Ration, a mixture of beef and beans, is sent as India Mess Beef, a pickled product, or in dried form. Our armed forces require large quantities of meat. A soldier's diet

contains about twice as much meat as the average per capita consumption by individuals in private life.

Almost 357 million pounds of lard were shipped under Lend-Lease during the past year. Animal fats are becoming an increasingly significant item in the wartime supply picture because of vegetable fat and oil scarcities and increased fat and oil requirements.

**PEANUTS:** Few crops in the history of American agriculture have assumed such importance in so short a time as peanuts. Last year a total of 1,964,000 acres were harvested --- 354,000 for oil and 1,610,000 for edible uses other than oil. An increase of almost 1,000 percent in acreage for oil is called for by the 1942 production goals, boosting total peanut acreage 155 percent. Assuming full attainment of this goal, the expected step-up in peanut oil in 1943 is set at 700,000,000 pounds compared with the estimated 70,000,000-pound production this year.

Most peanut oil now goes into food. This frees other food fats and oil for war use in the manufacture of soap, lubricants, paints, anti-freeze, leather goods and textiles, and articles formerly made from Oriental oils such as tung, palm and perilla. But due to the versatility of vegetable oils, peanut oil can be enlisted in actual war use, such as replacement of drying oils, whenever needed. Principal food uses of peanut oil now are in compounds, shortenings, cooking oils, oleomargarine and salad oil. When used in cooking, peanut oil gives off comparatively little smoke under a high temperature.

The peanut itself, in such forms as peanut butter, roasted peanuts and candy, is an inexpensive source of vitamin B-1, riboflavin, nicotinic acid, and several minerals.

Peanut meal, the product remaining after the oil has been extracted, will be a huge item this year in America's backlog of stock feed. Properly mixed with a roughage, it makes an ideal beef and dairy food.

It must be noted that there are two distinct types of peanuts: Oil type, such as the Spanish varieties; and the edible type, such as the Virginias, of which the large Jumbo peanuts are an example. Chief difference in the two types is in the oil content and size of the kernel.

**POTATOES:** One of the great staple foods, potatoes are now assuming increasing importance as a Lend-Lease commodity with 21,702,766 pounds being delivered to the United Nations in canned form between April, 1941, and last March.

Potatoes are also of direct benefit to the armament effort of the United Nations through the diversion of potato starch to the manufacture of certain types of explosives. Because steadily dropping prices in recent years had brought about a continuing reduction in the amount of potato acreage planted, the U. S. Department of Agriculture announced a price support program for the industry on March 4, 1942. The program is designed to encourage growers who cooperate in the ACP to plant their full 1942 potato acreage allotments, and estimates indicate that this will result in the production of the 365 million bushels needed to meet normal domestic requirements.

Prices will be supported by AMA purchases, various types of diversion and loans or purchases by the CCC.

**POULTRY:** Increased production of slaughter chickens is likely to result from expansion in egg production. The increase is expected to be absorbed largely through regular market channels and through increased use of chickens by our armed forces. Lend-Lease purchases of canned boned chicken have been extensive, but are not likely to be sufficiently large to support the price for chickens as egg prices have been supported. The goal for slaughter chickens for 1942 is 110 percent of the 1941 supply. Broilers and fryers are not included in the goal program, since neither can be used for canning or distribution. More than two million pounds of canned boned chicken have been bought thus far under Lend-Lease and delivered for shipment to our allies.

**RYE:** About 9 million bushels of the U. S. rye crop in 1941 went into the making of rye flour and other food products. About 7 million bushels were used for making beverage alcohol and a small amount -- 255,000 bushels -- went for industrial alcohol. Twenty-five million bushels were used on the farm as feed or seed.

**SOYBEANS:** Soybeans crushed into oil are one of our most important wartime commodities because of the loss of Far Eastern sources of vegetable oil supply and the increased use of fats and oils in this country because of the war. Almost all our soybean oil is used for food products -- margarine, shortening, and cooking oil. An increasingly large quantity is being used in making soap and its by-product, glycerine. Glycerine is used in making nitro-glycerine explosives for firing America's guns. Soybean oil is also used for making paint and varnish, linoleum and oil cloth, medicines and printing ink.

Soybeans are also an indirect producer of fats. The great volume of soybean cake or meal left after the oil is extracted

furnishes valuable protein concentrate feed for feeding to livestock, which in turn produce animal fats and oils.

Soybeans are also used in making plastics. This work is still considered in the experimental stage but few farm materials have proved as favorably constituted for plastics development as the soybean. Work has also been done on developing a textile fiber made with soybeans and there is good probability that a commercial soybean wool will be produced. These uses might become more important if other shortages develop as the war continues.

About 19 million pounds of soybeans and 15 million pounds of soya flour had been shipped to her allies by the U. S. under Lend-Lease through April 1, 1942.

**SUGAR:** Sugar is an important energy food for fighting men and for working men. Sugar is also a source of ethyl alcohol which is used in smokeless powder, dynamites and thousands of chemicals essential to war production. Beet and cane sugar growers within the borders of the 48 states have said they intend to plant almost one-fourth more sugar this year than last, which may prove an all-time high for a single year. There are no acreage allotments whatever this year and payments have been boosted one-third. Sugar rationing is necessary because 71 percent of our sugar is brought in from Hawaii, Puerto Rico, the Philippines and from Cuba. Ships ordinarily used to carry sugar are now needed to carry more critical war materials. Our Philippine supply, 15 percent of the total, is entirely cut off. Also our supplies are shared with other United Nations who have lost many normal sugar sources.

**VEGETABLES:** Commercial vegetables -- canned vegetables -- are particularly important in time of war both because of their qualities as health foods and because they may be preserved until needed. On December 19, 1941, the U. S. Department of Agriculture launched a program calling for the production of the greatest supply of canned vegetables in history during 1942. Final goals for the four major commercial vegetables call for a pack of 40 million cases of canned tomatoes, 38 million cases of peas, 12 and a half million cases of snap beans and 24 million cases of corn. The pack goals for these vegetables combined call for an increase of 15 per cent over the record 1941 pack. For the two vegetables most urgently needed, tomatoes and peas, the '42 goals are a quarter and a third above 1941 production.

Importance of processed vegetables to the war effort of the United Nations is shown by the fact that from April, 1941 to March, 1942, 98,419,569 pounds of canned tomatoes were turned over to America's allies while 1,621,380 pounds of canned peas were sent to the same channels.

In addition to supplying the armed forces, canned vegetables are also a valued source of nutrition on the home front and are used in school lunches and as an important item of diet for the civilian population.

**WHEAT:** The greatest wartime or peacetime use for wheat is of course as food for human beings and for animals. Four times as much wheat went into flour in this country last year as for any other use — 485 million bushels in all. Consumption of wheat as food for human beings is expected to increase from 8 to 10 million bushels this year because of its use in the diet of our armed forces. One hundred and ten million bushels of wheat were used as animal feed, 69 million bushels for seed, and 10 million bushels for breakfast foods last year. One million bushels went into alcohol, distilled spirits, coffee substitutes, and other miscellaneous products. The amount going into alcohol and distilled spirits is expected to be larger this year because of programs to substitute wheat for sugar in the making of such products, which in turn are used in manufacturing such strategic wartime materials as synthetic rubber and smokeless powder.

More than 3 million bushels of wheat had been shipped to other United Nations by this country through April 1, 1942.

**WOOL:** Last year, the United States used one billion pounds of wool, compared with an average yearly use of about 600 million pounds in other recent years. It is expected that we will use at least as much wool this year as last and that most of it will go into uniforms for our armed forces and other non-civilian, wartime uses. Aviators' jackets, pants, helmets, and boots are lined with shearling sheep skins. Sheep raisers have been asked by the Government to sheer many animals which normally would be marketed with wool too long for flying suits, and to sheer soon enough to permit the wool to grow before slaughter time to the proper length for sheep-lined clothing.

FARM PRODUCTS IN WAR MATERIALS

Construction of a Bomber

A Bomber Takes

- ( Shellac, paint
- ( Cotton and cotton linters (short staple)
- ( Paper and paper pulp
- ( Jute
- ( Wool and Mohair
- ( Rubber

- O -

Cotton fabric for surfacing ailerons.

Army's B-19 Douglas bomber has 410 square feet of cotton linen on its ailerons -- this is equivalent to  $7\frac{1}{2}$  bedsheets.

Army's Aeronca: Cotton linen for wings, tail and fuselage covers 650 square foot; equivalent to 12 bedsheets.

Beechcraft training ship uses 1,000 square feet of cotton linen; equivalent to 18 bedsheets.

\* \* \* \* \*

Cotton In A Battleship

55,000 pounds of 110 bales of cotton are used in building a 35 thousand ton battleship which costs a total of (60 million dollars.)

\* \* \* \* \*

Cotton And Alcohol In Ammunition

Cotton and alcohol are needed to make smokeless powder. To fire a 16 inch gun on a battleship requires 680 pounds of smokeless powder made from 476 pounds of cotton linters (roughly one bale) and the alcohol from  $1\frac{1}{5}$  acre of sugar cane or  $1\frac{1}{2}$  acres of wheat (U.S. average yield.)

Propelling charge for 6 inch gun contains up to 37 pounds of powder or 26 pounds of cotton linters.

\* \* \* \* \*

Cotton - Civilian Vs. Soldier

Average U. S. civilian consumes 25 pounds of cotton a year in terms of cotton goods.

Average U. S. soldier consumes 75 pounds of cotton a year in terms of cotton goods.

Average U. S. soldier in combat consumes several times his normal 75 pounds a year.

Wool

Average civilian uses  $2\frac{1}{2}$  pounds of wool a year.

Average soldier uses 100 pounds of wool a year.

\*\*\*\*\*

DATA ON AMOUNT OF PAINT AND OIL REQUIRED FOR SELECTED TYPES OF WARSHIPS

	UNIT	BATTLESHIP (35,000 ton)	CRUISER (10,000 ton)	DESTROYER (2,000 ton)	SUBMARINE (1,500)
Paint required	ton	35	10	2	1.5
Oil (45 percent)	ton	15.75	4.5	0.9	.7
Oil (reduced to gallons)	gallon	4,200	1,200	240	187
If Flaxseed Is Used For Oil- Flaxseed required to produce oil	bushels	1,654	473	95	74
Acres required (1941 yield 9.8 bu.)	acres	169	48	10	8
If Soybeans Are Used For Oil- Soybeans required to produce Oil	bushels	3,500	1,000	200	155
Acres required (1941 yield 18.2 bu.)	acres	192	55	11	9

U.S. AGRICULTURE'S 1942 PRODUCTION GOALS EXPRESSED IN ASSEMBLY LINE TERMS

COMMODITY	UNITS	GOALS	PRODUCED PER DAY	PRODUCED PER HOUR	PRODUCED PER MINUTE
Milk, farm	Quarts	56,818,182,000	155,666,000	6,486,000	108,000
Eggs, farm	Number	45,869,004,000	125,669,000	5,236,000	87,000
Beef, and veal <u>1/</u>	Pounds	18,600,000,000	50,959,000	2,123,000	35,000
Hogs <u>1/</u>	Pounds	A-775,000 cars B-1,170,093 cars	A-2,123 cars B-3,206 cars	88½ cars 2,270,000	1½ cars 38,000
Bcans, dry edible	Pounds	2,040,000,000	5,589,000	134 cars 233,000	2.2 cars 3,900
Potatoes	Pounds	23,613,678,000	64,695,000	2,696,000	45,000
Peas, for processing	#2 Cans	912,000,000	2,499,000	104,000	1,700
	Pounds	844,000,000	2,312,000	96,000	1,600
	Pounds	914,000,000	2,504,000	104,000	1,700
Tomatoes, for processing	#2 Cans	960,000,000	2,630,000	110,000	1,800
	Pounds	2,400,000,000	6,573,000	274,000	4,600
	Pounds	5,800,000,000	15,890,000	662,000	11,000
Peanuts	Total Production	3,973,117,000	10,885,000	453,000	7,500
	Pounds	2,695,487,000	7,385,000	308,000	5,100
	Pounds	700,000,000	1,918,000	80,000	1,300
Soybeans, for beans	Pounds	9,860,189,000	27,014,000	1,125,000	18,700
Soybear Oil <u>2/</u>	Pounds	1,100,000,000	3,014,000	126,000	2,100

1/ Liveweight marketings and farm slaughter. A- 24,000 lbs. average weight per freight car.  
2/ Estimated amount of oil if goals are reached. B- 17,000 lbs. average weight per freight car.

MUNITIONS GOALS

If 1942 War Production Goals are Reached the United States of America will Produce:

Type of Weapon	1942 (number)	Per Day* (number)	Per Hour (number)
Planes	60,000	164	7
Tanks	45,000	123	5
Anti-air craft guns	20,000	55	2
Ships (dead weight tons)	8,000,000	21,918	913

\* 24 hour work day used.

Based on Speech by President Franklin D. Roosevelt, January 6, 1942

SOLDIER EATS IN ONE YEAR

Milk	403 quarts
Potatoes	253 pounds
Dry Beans and Nuts	24 "
Tomatoes, Citrus Fruits	142 "
Leafy green and yellow vegetables	142 "
Other vegetables and fruits	312 "
Eggs	525 eggs
Meats, poultry and fish	287 pounds
Flours, cereals	215 "
Fats, oils (bacon and salt pork)	133 "
Sugars, syrups and preserves	114 "

U. S. ARMY OF 6,000,000 MEN WOULD EAT

Food	Unit	Per Year	Per Day	Per Hour	Per Minute
Milk.	Quarts	2,414,490,000	6,615,041	275,627	4,594
Potatoes	Pounds	1,515,480,000	4,152,000	173,000	2,883
Dry Beans and Nuts	Pounds	144,540,000	396,000	16,500	275
Tomatoes and Citrus Fruits	Pounds	849,720,000	2,328,000	97,000	1,617
Leafy Green and Yellow Vegetables	Pounds	851,940,000	2,334,082	97,253	1,621
Other Vegetables and Fruits	Pounds	1,872,480,000	5,130,082	213,753	3,563
Eggs	Dozens	262,800,000	720,000	30,000	500
Meats, Poultry, and Fish	Pounds	1,723,560,000	4,722,082	196,753	3,279
Flours and Cereals	Pounds	1,292,100,000	3,540,000	147,500	2,458
Fats, oils (bacon & pork)	Pounds	795,000,000	2,178,082	90,753	1,512
Sugars, Syrups, and Preserves	Pounds	681,120,000	1,866,082	77,753	1,296

## A FOOD SHIP SAILS

(Average Amounts It Contains)

Commodity	Amount 1/	Equivalent	Whole Year's Production Of:	Farms 2/
Dried Eggs	6,000 barrels	Fresh Eggs 2,700,000 doz.	229,137 hens	323
Dried Milk	6,000 barrels	Fluid Milk 13,200,000 lbs.	2,783 cows	497
Evaporated Milk	16,552 cases	1,440,000 lbs.	304 cows	54
Cheese	20,000 boxes	Fluid Milk 14,440,000	3,037 cows	542
Canned Pork	14,500 large cans	870,000 lbs.	5,021 hogs	314
Cured Pork	2,500 boxes	874,000 lbs.	5,044 hogs	315
Lard	16,800 boxes	840,000 lbs.	Lard from 27,632 hogs	1,727
Flour	6,061 sacks	14,256 bus.	838 acres	21
Canned Vegetables	26,111 cases	940,000 lbs.	40 acres of tomatoes 100 acres of snap beans 102 acres of peas	15 16
				3,824

1/ Total amount of all commodities equal to cargo average U. S. freighter will carry.

2/ Based on average numbers for farms reporting these crops and animals.

DRAMATIC FACTS

ABOUT 1942 PRODUCTION GOALS

\* MEAT - enough to pave 7 four-lane superhighways from New York to San Francisco - one inch thick.

EGGS - enough, end to end, to reach the moon seven times

MILK - enough to float the navies of the United Nations

CANNED PEAS - enough cases end to end to reach from Los Angeles to Singapore

CANNED TOMATOES - enough cases to reach, end to end, from Boston to Bombay, India

CORN ACREAGE - an area one-fifth larger than total area of Italy and Sicily - almost as large as area of Japan proper.

SOYBEANS - enough oil, if used for no other purpose, to paint all the navies of the United Nations 330 times.

FLAXSEED - enough oil, if used for no other purpose, to paint all the navies of the United Nations 150 times.

BATTLESHIP = WORK + FOOD

To make a battleship of 35,000 tons --  
takes 26,900,000 man hours of labor  
and food from 42,000 acres. \*

---

BOMBER = WORK + FOOD

To make a bomber --  
takes 100,000 man hours of labor  
and food from 155 acres. \*

---

MEDIUM TANK = WORK + FOOD

To make a medium size tank --  
takes 26,800 man hours of labor  
and food from 43 acres. \*

---

\* Based on 1940 census figures of 1939 production in State of Pennsylvania.